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Docket No. F-8507

Ser. No. 10/518,280

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) A [In] a bearing and pinion shaft apparatus for supporting comprising:

a shank portion of a pinion shaft having a pinion gear at one end, ~~the~~ bearing apparatus for supporting the pinion shaft, comprising:

a double row angular contact ball bearing with vertex of contact angles outside of bearing, said double row contact bearing rotatably supporting said pinion shaft:

said double row angular contact ball bearing comprising:

an outer ring having inner circumferential surfaces forming
first and second outer raceway surfaces, and first and second outer
ring counter bores at first and second outer ring axial ends thereof;

a first inner ring having a first outer circumferential surface
including a first inner raceway surface pairing with said first outer
raceway surface, and said first outer circumferential surface
including a first circumferential depression extending to a first axial

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end of said first inner ring, said first circumferential depression having a smaller minimum diameter than a minimum diameter of said first inner raceway surface;

a second inner ring having a second outer circumferential surface including a second inner raceway surface pairing with said second outer raceway surface, and said second outer circumferential surface including a second circumferential depression extending to a first axial end of said second inner ring, said second circumferential depression having a smaller minimum diameter than a minimum diameter of said second inner raceway surface;

said first and second inner rings being disposed adjacent each other with said first ends thereof being next to each other such that said first and second circumferential depressions together form a circumferential recess;

balls interposed between said first outer raceway surface and said first inner raceway surface, and balls interposed between said second outer raceway surface and said second inner raceway surface;

said first and second circumferential depressions having side walls respectively extending to said first and second inner raceway

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surfaces at positions radially inward of said balls such that said balls overhang said circumferential depression;

~~wherein grease is filled in a bearing internal space sealed with seals equipped at both ends in a shaft direction~~

a first seal sealing said first outer ring axial end to a second axial end of said first inner ring;

a second seal sealing said second outer ring axial end to a second axial end of said second inner ring; and

grease disposed in said circumferential recess.

2. (Canceled)

3. (Currently Amended) The bearing apparatus for supporting the pinion shaft according to claim [[2]] 1, whercin a contact angle of said [[ball]] balls is set to be not less than 30 degrees and not more than 45 degrees.

4. (Currently Amended) The bearing apparatus for supporting the pinion shaft according to claim [[2]] 1, wherein a radius of curvature of each of said first and second outer raceway surface surfaces of said outer ring is set to be not less than 51.0% and not more than 52% of a ball diameter of said balls, and a radius of curvature of the first and second inner raceway surfaces surface of each of said

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inner ring is set to be not less than 50.2% and not more than 51.2% of the ball diameter, respectively.

5. (Currently Amended) The bearing apparatus for supporting the pinion shaft according to claim [[2]]1, wherein an outer peripheral portion of said [[each]] first seal is fixed to the [[two]] first outer ring counter bores of said outer ring; and said first seal comprises a lip portion at an inner periphery having a shape for contacting to each a shoulder portion of said two inner rings first inner ring, and being is able to be opened towards the outside of the bearing.

6. (Currently Amended) The bearing apparatus for supporting the pinion shaft according to claim 5, wherein the lip portion of the first seal arranged on a pinion gear side is compulsorily pressed to the shoulder portion of said first inner ring by means of a spring ring, and said first seal is arranged adjacent said pinion gear.

7. (Currently Amended) The bearing apparatus for supporting the pinion shaft according to claim 1, wherein an air flow portion for communicating an inside with an outside of said bearing is formed in said second seal and said second seal is arranged on a counter-pinion gear side of said bearing.

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8. (Currently Amended) The bearing A pinion shaft support apparatus according to claim 1, further comprising:

said [[a]] pinion shaft having [[a]] said pinion gear at one end and having a screw shaft portion at the other second end;

said [[a]] double row angular contact ball bearing with vertex of contact angles outside of bearing being attached to an outside of [[a]] said shank portion of said pinion shaft; and

a nut which [[is]] screwed and fixed onto said screw shaft portion of said pinion shaft and integrates to secure said double row angular contact ball bearing with vertex of contact angles outside of bearing with on said pinion shaft, wherein said double row angular contact ball bearing with vertex of contact angles outside of bearing is filled with grease in a bearing internal space sealed with seals equipped at both ends in a shaft direction.

9. (New) The bearing apparatus according to claim 1 wherein said side walls of said first and second circumferential depressions are concaved.

10. (New) The bearing apparatus according to claim 9 whercin said positions whrcat said side walls of said first and second circumferential depressions join said first and second inner raceway surface are at positions closer to a radial projection of centers of said balls than a radial projection of an outermost

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periphery of said balls on sides of said first axial ends of said first and second inner rings, said radial projections being orthogonal to an axis of said bearing apparatus.

11. (New) The bearing apparatus according to claim 1 wherein said positions whereat said side walls of said first and second circumferential depressions join said first and second inner raceway surface are at positions closer to a radial projection of centers of said balls than a radial projection of an outermost periphery of said balls on sides of said first axial ends of said first and second inner rings, said radial projections being orthogonal to an axis of said bearing apparatus.